

What Is Claimed Is:

1. A method for triggering solenoid valves assigned to gas-exchange valves in an electrohydraulic valve actuation of an internal combustion engine having a plurality of combustion chambers, in which

- the solenoid valves assigned to the gas-exchange valves may be activated independently of each other;
  - at least crankshaft-synchronous trigger signals for solenoid valves of the internal combustion engine are ascertained in a control device and transmitted to an output stage;
  - the output stage triggers the solenoid valves on the basis of the transmitted trigger signals; and
- the gas-exchange valves of each combustion chamber each have at least one intake valve and at least one discharge valve,

wherein

- all solenoid valves (Mi) of all gas-exchange valves of a combustion chamber form a solenoid valve set (MGj, MG1, MG2, MG3);
- an activation profile (24, 24a, 24b) is specified for all solenoid valves (Mi) of a solenoid valve set (MGj, MG1, MG2, MG3);
- a crankshaft-synchronous activation signal (23) is ascertained for each combustion chamber in the control unit (12) and supplied to the output stage (18);
- the output stage activates the solenoid valves on the basis of the activation signal of the cylinders according to the activation profile stored for the individual solenoid valve.

2. The method as recited in Claim 1,

wherein a specific activation profile is determined for each individual solenoid valve (Mi) of the solenoid valve set (MGj, MG1, MG2, MG3).

3. The method as recited in one of the preceding claims,

wherein the activation signal (23) for each individual cylinder is made up of a binary signal, the activation signal (23) being determined in the control device (12) and conveyed to the output stage.

4. The method as recited in Claim 3,  
wherein the activation signal (23) for each individual cylinder is transmitted to the output stage (18) on a cylinder-specific activation-signal line (12).
5. The method as recited in one of Claims 3 or 4,  
wherein the output stage (18) activates solenoid valves (Mi) of a cylinder on the basis of the change in the value of the activation signal (23) of this cylinder according to the particular activation profile (24, 24a, 24b), the solenoid valves (Mi) assigned to the intake valves being activated as a result of a first value change between two values of the activation signal (23), and the solenoid valves (Mi) assigned to the discharge valves being activated as a result of a second value change between two values of the activation signal (23), the second value change differing from the first value change.
6. The method as recited in one of the preceding claims,  
wherein the activation profiles (24, 24a, 24b) are determined in the control device (11) and transmitted to the output stage (18) via a data line (13) and stored there in a memory (17) for use in the triggering of the solenoid valves (Mi).
7. The method as recited in Claim 5,  
wherein the activation profiles (24, 24a, 24b) stored in the memory (17) of the output stage (18) are able to be updated during the operation of the output stage (18) by values newly ascertained in the control device (11).
8. The method as recited in one of the preceding claims,  
wherein an activation profile (24, 24a, 24b) is made up of the indication of a plurality of consecutive time durations (Ti1, Ti2, Ti3, Ti4).
9. The method as recited in Claim 8,  
wherein the activation profile (24, 24a, 24b) consists of specifying four consecutive time durations (Ti1, Ti2, Ti3, Ti4), the first time duration (Ti1) representing the duration of a waiting time, the second time duration (Ti2) the duration of an application of a pull-up voltage at the solenoid valve (Mi), the third time duration (Ti3) the duration of a free-flight phase, and the fourth time duration (Ti4) the duration of the application of a holding voltage at the solenoid valve.

10. The method as recited in one of the preceding claims, wherein an adaptation set (Aij) is ascertained in the control device (11) for solenoid valves (Mi), which includes an adaptation of the values of the activation profile (24, 24a, 24b), the values of the adaptation set (Aij) being transmitted by the control device (11) to the output stage (18), in particular by means of a second data line (14), one adaptation group of adaptation sets (Aij) for the solenoid valves (Mi) preferably being ascertained for each solenoid valve set (MG1, ..., MG3).

11. A circuit system for the triggering of solenoid valves assigned to gas-exchange valves, trigger signals for the activation of the solenoid valves being ascertained in a control unit, signals being transmitted by the control unit to an output stage via lines, and the triggering of the solenoid valves being implemented in the output stage, in particular as recited in one of the preceding claims, wherein a data line (13) for the transmission of activation profiles (24, 24a, 24b) of solenoid valves (Mi) and activation-signal lines (12) for the crankshaft-synchronous activation of the actuation of the solenoid valves (Mi) of cylinders in response to activation signals (23) are arranged between control unit (11) and output stage (18).

12. The circuit system as recited in Claim 11, wherein an activation-signal line (12) is provided between the control unit (11) and the output stage (18) for each cylinder.

13. The circuit system as recited in one of Claims 11 or 12, wherein a second data line (14) is provided for the transmission of the adaptation sets (Aij).

14. The circuit system as recited in one of Claims 11 through 13, wherein the output stage (18) has a memory (17) for storing at least the activation profiles (24, 24a, 24b) of the solenoid valve sets (MG1, ..., MG3).

15. The circuit system as recited in one of Claims 11 through 14, wherein a computing unit (19) is provided in the output stage (18) to determine the trigger signals from the activation profiles (24, 24a, 24b) and the activation signals (23) as well as from the adaptation sets (Aij), if appropriate.